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10/762,316	01/23/2004	Toshihisa Kuroiwa	XA-8680B	4638

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MILES & STOCKBRIDGE PC
1751 PINNACLE DRIVE
SUITE 500
MCLEAN, VA 22102-3833

EXAMINER
VILLECCO, JOHN M

ART UNIT	PAPER NUMBER
2622	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/20/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>23 January 2004</u>.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-22</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1,6 and 11-22</u> is/are rejected.

7)☒ Claim(s) <u>2-5 and 7-10</u> is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on <u>29 November 2004</u> is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☒ All   b)☐ Some * c)☐ None of:

        1.☐ Certified copies of the priority documents have been received.

        2.☒ Certified copies of the priority documents have been received in Application No. <u>09/019,559</u>.

        3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☒ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date <u>1/23/04</u>.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .

5)☐ Notice of Informal Patent Application

6)☐ Other: _____ .

DETAILED ACTION

Specification

1.   The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

Claim Rejections - 35 USC § 102

2.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3.   **Claims 1, 6, 11, 14, and 15 are rejected under 35 U.S.C. 102(b) as being anticipated by Shiota (U.S. Patent No. 4,965,662).**

4.   Regarding *claim 1*, Regarding claim 1, Shiota discloses, in fig. 1, a frame memory device which uses raster scanning (col. **3, lines 28-33**) has a first memory (8) and second memory (13) capable of storing a frames of video images (col. 2, lines 9-16). The video reproducing apparatus (1) sequentially reproduces one frame of video image (col. 6, lines 15- 17) which is sent to the frame memory (8) where the video signal is read out while thinning is carried out in both the horizontal and vertical scan directions (col. 4, lines 23-38). The thinned video signals are then sequentially read out and displayed (col. 6, lines 44-65). Shiota discloses thinning a video signal in the horizontal and vertical directions and storing the thinned signals in a frame memory (col.

4, lines 23-38). The thinning of a video signal may be considered a form of rearranging a video signal.

5.   *Claim 6* is considered substantively equivalent to claim 1.

6.   Regarding *claim 11*, Shiota discloses dividing horizontal and vertical addresses of a region of memory into M subframes in the horizontal direction and N subframes in the vertical direction with each having a predetermined number of subframes then thinning the horizontal and vertical directions by thinning factors (col. 3, lines 33-45). Shiota further discloses that the thinning factors may be set and then stored in the frame memory (col. 4, lines 3 8-54) thereby being written into a memory at a predetermined interval.

7.   *Claims 14-15* are considered substantively equivalent to claim 1.

Claim Rejections - 35 USC § 103

8.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

9.   <u>Claims 12, 13 and 16-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shiota (U.S. Patent No. 4,965,662) in view of Yanagihara et al. (U.S. Patent No. 5,880,941).</u>

10.   Regarding *claim 12,* Shiota discloses dividing horizontal and vertical addresses of a region of memory into M subframes in the horizontal direction and N subframes in the vertical direction with each having a predetermined number of subframes then thinning the horizontal

and vertical directions by thinning factors (col. **3,** lines **3** 3-45). Shiota further discloses that the thinning factors may be set to any thinning ratio to thin the video signals and then stored in the frame memory (col. 4, lines **3** 8-54) thereby being written into a memory at a predetermined interval. Shiota does not explicitly state that the signals are in a 4:2:2 ratio. However, Shiota does disclose that the signal is an NTSC signal (col. **3,** lines 13- 1 5). It is inherent that the **4:2:2** ratio is a well known NTSC signal ratio. Shiota does not explicitly state that the signals are Y, C_R, and C_B, wherein the signals are stored in the memory by rearranging the C_R, C_B, signals while not rearranging the Y signal. However, Yanagihara et al, discloses a method of recording and reproducing a digital video signal (col. 1, lines 6-9) in which luminance (Y) signals and color difference signals (C_R, C_B) are separated using a Y/C separator. The Y signals are sent to the VCR where they are stored unchanged, while the color difference signals are sent to a line sequence filter (116) where the alternately sent to the VCR and stored (col. 6, lines 12-36). Therefore, it would have been obvious to modify the Shiota system as taught by Yanagihara et al. to provide various sampling ratios.

11.   Regarding *claim 13,* Shiota discloses dividing horizontal and vertical addresses of a region of memory into M subframes in the horizontal direction and N subframes in the vertical direction with each having a predetermined number of subframes then thinning the horizontal and vertical directions by thinning factors (col. 3, lines 33-45). Shiota further discloses that the thinning factors may be set to any thinning ratio to thin the video signals and then stored in the frame memory (col. 4, lines 3 8-54) thereby being written into a memory at a predetermined interval. Shiota does not explicitly state that the signals are in a 4:2:2 ratio. However, Shiota does disclose that the signal is an NTSC signal (col. **3,** lines 13-15). It is inherent that the 4:2:2 ratio is

a well known NTSC signal ratio. Shiota does not explicitly state that the signals are Y, C_R, and C_B, wherein the signals are stored in the memory by rearranging the C_R, C_B, signals while not rearranging the Y signal. However, Yanagihara et al. discloses a method of recording and reproducing a digital video signal (col. 1, lines 6-9) in which luminance (Y) signals and color difference signals (C_R, C_B) are separated using a Y/C separator. The Y signals are sent to the VCR where they are stored unchanged, while the color difference signals are sent to a line sequence filter (116) where the alternately sent to the VCR and stored (col. 6, lines 12-36). Therefore, it would have been obvious to modify the Shiota system as taught by Yanagihara et al. to provide various sampling ratios.

12.   Regarding *claim 16,* Regarding claim 13, Shiota discloses dividing horizontal and vertical addresses of a region of memory into M subframes in the horizontal direction and N subframes in the vertical direction with each having a predetermined number of subframes then thinning the horizontal and vertical directions by thinning factors (col. 3, lines 33-45). Shiota further discloses that the thinning factors may be set to any thinning ratio to thin the video signals and then stored in the frame memory (col. 4, lines 38-54) thereby being written into a memory at a predetermined interval. Shiota does not explicitly state that the signals are in a 4:2:2 ratio. However, Shiota does disclose that the signal is an NTSC signal (col. 3, lines 13-15). It is inherent that the 4:2:2 ratio is a well known NTSC signal ratio. Shiota does not explicitly state that the signals are Y, C_R and C_B, wherein the signals are stored in the memory by rearranging the C_R, C_B signals while not rearranging the Y signal. However, Yanagihara et al. discloses a method of recording and reproducing a digital video signal (col. 1, lines 6-9) in which luminance (Y) signals and color difference signals (C_B, C_R) are separated using a Y/C separator.

The Y signals are sent to the VCR where they are stored unchanged, while the color difference signals are sent to a line sequence filter (1 16) where the alternately sent to the VCR and stored (col. 6, lines 12-36). Therefore, it would have been obvious to modify the Shiota system as taught by Yanagihara et al. to provide various sampling ratios.

13.   Regarding *claim 17,* Shiota discloses dividing horizontal and vertical addresses of a region of memory into M subframes in the horizontal direction and N subframes in the vertical direction with each having a predetermined number of subframes then thinning the horizontal and vertical directions by thinning factors (col. **3,** lines 33-45). Shiota further discloses that the thinning factors may be set to any thinning ratio to thin the video signals and then stored in the frame memory (col. 4, lines 38-54) thereby being written into a memory at a predetermined interval. Shiota does not explicitly state that the signals are in a 4:2:2 ratio. However, Shiota does disclose that the signal is an NTSC signal (col. 3, lines 13-15). It is inherent that the 4:2:2 ratio is a well known NTSC signal ratio. Shiota discloses reading out three video signals (col. 4, lines 23 -28). Shiota does not explicitly state that the signals are Y, C_R, and C_B, wherein the signals are stored in the memory by rearranging the C_R, C_B, signals while not rearranging the Y signal. However, Yanagihara et al. discloses a method of recording and reproducing a digital video signal (col. 1, lines 6-9) in which luminance (Y) signals and color difference signals (C_R, C_B) are separated using a Y/C separator. The Y signals are sent to the VCR via Y bus where they are stored unchanged, while the color difference signals are sent to a line sequence filter (1 16) via C bus where the alternately sent to the VCR and stored (col. 6, lines 12-36). Therefore, it would have been obvious to modify the Shiota system as taught by Yanagihara et al, to provide various sampling ratios.

14.   Regarding claims **18-19,** Shiota discloses dividing horizontal and vertical addresses of a region of memory into M subframes in the horizontal direction and N subframes in the vertical direction with each having a predetermined number of subframes then thinning the horizontal and vertical directions by thinning factors (col. 3, lines 33-45). Shiota further discloses that the thinning factors may be set to any thinning ratio to thin the video signals and then stored in the frame memory (col. 4, lines 38-54) thereby being written into a memory at a predetermined interval. Shiota does not explicitly state that the signals are in a **4:2:2** ratio. However, Shiota does disclose that the signal is an NTSC signal (col. 3, lines 13- 15). It is inherent that the 4:2:2 ratio is a well known NTSC signal ratio. Shiota discloses reading out three video signals (col. 4, lines 23-28). Shiota does not explicitly state that the signals are Y, C_R, and C_B, wherein the signals are stored in the memory by rearranging the C_R, C_B signals while not rearranging the Y signal. However, Yanagihara et al. discloses a method of recording and reproducing a digital video signal (col. 1, lines 6-9) in which luminance (Y) signals and color difference signals (C_R, C_B) are separated using a Y/C separator. The Y signals are sent to the VCR via Y bus where they are stored unchanged, while the color difference signals are sent to a line sequence filter (1 16) via C bus where the alternately sent to the VCR and stored (col. **6,** lines 12-36). A helper signal may be superimposed on either the C_B or the C_R signal (col. 8, lines 6-9) and causes the superimposed signal to be rearranged (col. 7, lines 37-59). Therefore, it would have been obvious to modify the Shiota system as taught by Yanagihara et al. to provide various sampling ratios.

15.   Regarding claims **20-22,** Shiota discloses that the thinning factors may be set to any thinning ratio to thin the video signals and then stored in the frame memory (col. 4, lines 38-54) thereby being written into a memory at a predetermined interval. Shiota does not explicitly state

that the signals are in a **4:2:2** ratio. However, Shiota does disclose that the signal is an NTSC

signal (col. **3,** lines 13-15). It is inherent that the **4:2:2** ratio is a well known NTSC signal ratio.

Allowable Subject Matter

16. Claims 2-5 and 7-10 are objected to as being dependent upon a rejected base claim, but

would be allowable if rewritten in independent form including all of the limitations of the base

claim and any intervening claims.

17. The following is an examiner's statement of reasons for allowance:

Claims 2-5 and 7-10 are objected to as being dependent upon a rejected base claim, but

would be allowable if rewritten in independent form including all of the limitations of the base

claim and any intervening claims. The prior art does not teach or fairly suggest a frame memory

device that outputs raster-scanned images which has a rearranging means for rearranging the C_B,

and C_R, signals in the order of C_B, C_B, C_R, C_R, or the order of C_R, C_R, C_B, C_B, to alternate the

signal at every other pixel and stored in a C memory from a C bus while simultaneously storing

Y signals from a Y bus into a Y memory in synchrony with the C_B and C_R signals.

Any comments considered necessary by applicant must be submitted no later than the

payment of the issue fee and, to avoid processing delays, should preferably accompany the issue

fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for

Allowance."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to John M. Villecco whose telephone number is (571) 272-7319. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Ometz can be reached on (571) 272-7593. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

John M. Villecco
March 8, 2007